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# Long-Term Care Insurance Research Methodology and Findings

## Data Source

This analysis uses a database consisting of roughly 19,000 long-term care insurance (LTCi) policies representative of policies sold in 1995, 2000, and 2005, thus making them representative of policies sold during this 10-year period. Additional analyses are performed on a policyholder database comprising roughly 6,000 policyholders that completed detailed surveys capturing socio-demographic (e.g. age, gender, marital status, living arrangement, income, assets, employment status, etc.) and attitudinal information (e.g. primary purchase reasons, attitudes about long-term care risk, costs and payment, role of government, etc.) linked to the specific policies that they purchased in these years.

This analysis also uses longitudinal information in the Health and Retirement Study (HRS) and the National Association of Insurance Commissioners (NAIC) Long-Term Care Experience Exhibit Reports.

## Study Population

This analysis includes LTCi policyholders who purchased policies in 1995, 2000, and 2005 in the individual market, that represent stand-alone policies (and not combination products, which include life insurance policies whose benefits can be accessed if there is a long-term care need or an annuity product whose income stream increases if there is a long-term care event). Table 1 below summarizes the sample size available for analysis by policy year and by state.

## Variable Definitions and Method

### Average Individual Policy Value at the Time of Purchase

The policy value at the time of purchase is computed by multiplying the policy daily benefit times the policy duration times 365 days. If a policy has a lifetime duration, a 10-year benefit duration is used. There are 3 types of policy designs captured in the data that are accounted for in the way that initial policy value is calculated:

1. For Nursing home (NH) or Home care only (HHC) policy, the policy value equals the NH or HHC daily benefit times the NH or HHC duration times 365 days;
2. For a single policy covering NH and HHC, where separate benefit pools are specified, the policy value is the sum of its NH policy value and the HC policy values;
3. For a NH and HC integrated policy, the policy value equals NH daily benefit times NH duration times 365 days.

## Average Individual Policy Value in 2020

June 30, 2020 was selected as the anchor date to measure the policy value in 2020. The number of years between the individual policy purchase date and June 30, 2020 was the duration over which values are cumulated. Whether a policy has inflation protection as well as the type of inflation (e.g. simple or compounding) is factored into the calculation. For policies without inflation protection or in cases where the inflation option is available for purchase or there is missing data, the 2020 policy value equals the policy value at the purchase date. For a policy with simple inflation protection, the 2020 policy value equals the policy value at the purchase date times (1+the inflation amount) the number of years. For a policy with a compound inflation protection or indexed inflation protection, the 2020 policy value equals the policy value at purchase date times (1+the inflation amount) raised to the power of the number of years from purchase through 2020.

## Adjusted Average Individual Policy Value in 2020

The adjusted policy value has both mortality rate and voluntary policy lapse rates factored in. It takes into account the probability that a policy will remain in force after a given number of years has passed. It can be viewed as the “life expectancy” of a policy being in-force. It is referred to as the annuity factor. The mortality rates are taken from the [Retirement Plan \(RP\) 2000 Mortality Table](#). Tables 4-5 are used for males and tables 4-6 are used for females. The healthy annuitant mortality rates are used for policyholders age 50 or above, and the employee mortality rates are applied to policyholders less than age 50.

The voluntary policy lapse rate is assumed to start relatively high in year 1 and then decline to a constant level at year 6 and beyond. Based on a combination of reported experience and assumptions, lapse rates are modeled as follows: 3% lapse rate in year 1, 2% for year 2, 1.5% for year 3, 1% for year 4, 0.75% for year 5, and 0.5% for year 6 or more. Every year the number of policies remaining in-force is a function of how many people are alive and how many people have not voluntarily lapsed their policies. The cohort of new policyholders from each of the three purchase years – 1995, 2000, and 2005 – are “aged” through to 2020, which enables the calculation of how much policy value is left, after accounting for the probability that someone is still alive and has their policy.<sup>1</sup>

For example, a male policyholder at age 70 in 2005 would have an adjusted factor calculated as follows:

$$(1 - \text{age 70 male mortality rate}) * (1 - 3\%) * (1 - \text{age 71 male mortality rate}) * (1 - 2\%) * (1 - \text{age 72 male mortality rate}) * (1 - 1.5\%) * (1 - \text{age 73 male mortality rate}) * (1 - 1\%) * (1 - \text{age 74 male mortality rate}) * (1 - 0.75\%) * (1 - \text{age 75 male mortality rate}) * (1 - 0.5\%) * (1 - \text{age 76 male mortality rate}) * (1 - 0.5\%) * \dots * (1 - \text{age 85 male mortality rate}) * (1 - 0.5\%).$$

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<sup>1</sup> Note that for one company’s policyholders in the 1995 study, the average of the mortality rate of male and female is used because its gender data is missing.

In the year 2020, the final adjusted policy value would be computed by multiplying the annuity value by the policy value in 2020. Each individual policyholder has their own annuity factor adjustment applied to their individual policy value in 2020. This equation is used to calculate the actual value that remains in the various policies sold between 15 and 25 years ago in 2020.

### **Aggregated National Policy Value in 2020**

In order to generalize sample results to the market as a whole, a weight variable was generated based on each participated company's sample size and market share in 1995, 2000, and 2005. This weight is used to aggregate results so that they are reflective of the distribution of sales in the market as a whole. Data on sales for individual companies that participated in annual sales survey represented roughly 75% of all policies sold during these years. Thus, the results are grossed up to account for this; that is, the final aggregated national policy value is calculated as follows: ((Aggregated policy value)/.75).

### **Total Policy Value, 1995-2005**

The total policy value from 1995-2005 is estimated by using linear interpolation. Using this method, the estimated total policy value is \$792,571,062,054.

### **Aggregated Policy Value in 2020 for States**

For each selected state, the aggregate policy value in 2020 is generated by multiplying the state average policy values times an estimate for state policy sales in each of the years studied. The state average policy value uses the same policyholder database segmented by state of residence. Sales estimates for the states are based on the sample share of policies sold in the state multiplied by the total number of aggregated sales in that year. Table 1 summarizes the sample size available for analysis by policy year and by state. Table 2 provides aggregated estimates for sales by states.

**Table 1: Policyholder Database Sample Sizes by State and Year**

Sample Size by State	1995		2000		2005	
	Count	% of Total Sample	Count	% of Total Sample	Count	% of Total Sample
CA	365	5.6%	249	5.8%	727	9.2%
FL	623	9.5%	319	7.4%	563	7.1%
NJ	105	1.6%	590	13.7%	382	4.8%
NY	164	2.5%	192	4.5%	563	7.1%
OH	250	3.8%	131	3.1%	310	3.9%
TX	437	6.7%	207	4.8%	350	4.4%
VA	198	3.0%	97	2.2%	238	3.0%
National	6,568		4,294		7,943	

**Table 2: Estimated Sales by State and Year**

Total Sales by State	1995	2000	2005
CA	17,372	26,365	31,309
FL	29,470	33,638	24,162
NJ	4,963	62,276	16,335
NY	7,755	20,456	24,162
OH	11,788	13,637	13,272
TX	20,784	21,819	14,974
VA	9,306	10,001	10,209
Total Sales for Participated Companies	232,660	340,929	255,236
National Sales (Participated Companies Counted for 75% Total Sales)	310,213	454,572	340,315

## Individual Buyer Survey Data

To estimate the potential spend-down rate for three cohorts of LTCi purchasers, we focused our analysis on buyers age 50 and over for whom gender, marital status, and detailed income and asset data were available. Table 3 below summarizes the analytic sample used in the analysis.

*Table 3: Original Sample and Analytic Sample by Purchase Year*

Study Year	Original Sample Size	Final Analytic Sample
1995 Buyer Data	3,036	2,291
2000 Buyer Data	2,876	2,300
2005 Buyer Data	1,274	943
Total	7,186	5,534

The final sample size in each year for individual companies was weighted to reflect their market share of sales in that year. This assures that results can be generalized to the population of purchasers. Participating companies represented roughly 75% to 80% of total sales in each of these years.

## Estimating Current Income and Asset Levels Based on Baseline Wealth

Because the HRS is conducted bi-annually in even years, we use data from 1996 to make projections for the 1995 cohort, and data from 2006 to make projections for the 2005 cohort. In fact, the data show that this makes very little difference at all, as asset levels within broad categories stay relatively constant over time. We project asset values from their baseline values out to 15 years from the purchase date, which represents the range of ages where the need for LTSS begins to increase rapidly. This is typically around age 78 through age 90. Thus, assets are projected for 1995 purchasers out to 2010. For purchasers in 2000, asset values are projected through 2016 and for purchasers in 2005, values are projected through 2020.<sup>2</sup>

## Projected Need for LTSS Persons Turning 65

[Published research](#) suggests that for individuals turning age 65, there is a 46.7% chance of becoming functionally impaired in at least two activities of daily living (ADLs) or being cognitively impaired if they are male, and a 57.5% chance if they are female. These individuals are the ones who are most likely to require LTSS to compensate for these issues. But even among this group, the duration of need varies greatly. Table 4 summarizes the expected duration of LTSS need among those who have reached this threshold of disability.

<sup>2</sup> Since HRS data is only available through 2016, we have adjusted values up to reflect 2020 dollars.

**Table 4: Probability of Having an LTSS Need After Age 65 and Expected Duration of Need**

Gender	Probability of Needing LTSS <sup>3</sup>	Duration of LTSS Need Among Those Who Require Services			
		<1 Year	1 to 2 Year	2 to 5 Years	>5 Years
Male	46.7%	39.4%	15.8%	23.8%	21.0%
Female	57.5%	33.7%	14.1%	21.4%	31.0%

These percentages are randomly applied to the cohort of purchasers in each year—taking account their gender status –to yield subsets of individuals who are projected to use LTSS for specific durations. Table 5 shows the number of projected LTSS users from each of the three buyer cohorts. The aggregate distributions are in line with published data.

**Table 5: The Distribution of the LTCi Policyholder Sample by Disability Status and Expected Months of LTSS Need**

Gender	Sample Size	LTC Service Users	Average Number of Months of LTSS Need			
			<1 Year (9 Months)	1 to 2 Years (18 Months)	2 to 5 Years (42 Months)	>5 Years (96 Months)
<b>1995 Buyers</b>	2,291	1,209				
Male	1,003	468	185	74	111	98
Female	1,288	741	250	104	158	229
<b>2000 Buyers</b>	2,300	1,211				
Male	1,040	485	191	77	115	102
Female	1,260	724	244	102	155	224
<b>2005 Buyers</b>	943	497				
Male	416	194	77	31	46	41
Female	527	303	102	43	65	94

### Estimated Daily LTSS Cost

In order to estimate the liabilities faced by those with LTSS needs, we relied on the Genworth [Cost of Care Surveys](#) going back to 2010 – the year for which we project individuals from the 1995 cohort will begin using services. We focus on the semi-private nursing home daily rate as the daily liability faced by LTSS users. With the minimum age of buyers at 50, all 1995 buyers turned 65 or above in 2010, all 2000 buyers turned 65 or above in 2016, and 2005 buyers turned 65 or above in 2020. Therefore, the semi-private NH daily rate at \$255 in 2020 is applied to 2005 buyers, 2016 semi-private NH daily rate at \$225 is applied to 2000 buyers, and \$185 NH daily rate in 2010 is used to 1995 buyers.

<sup>3</sup> This assumes the individual has at least two limitations in activities of daily living or is cognitively impaired.

**Table 6: Cost of Care Based on Median Semi-Private Nursing Home Rate**

Year	Median Daily Rate for Semi-Private Room
2020	\$255
2016	\$225
2010	\$185

### **Income and Asset Exempt from Medicaid Spend Down**

[Medicaid eligibility criteria](#) vary by state. For the purposes of this analysis, we applied eligibility criteria relating to income and assets which are most common across the states and typically vary depending on whether one is single or married with a spouse residing in the community. In general, a community spouse may keep one-half of the couple’s total “countable” assets up to a maximum of \$128,640 (in [2020](#)). Called the “community spouse resource allowance,” this is the most that a state may allow a community spouse to retain without a hearing or a court order. The least that a state may allow a community spouse to retain is \$25,728 (in 2020). In [2010](#), these standards were slightly lower at somewhere between \$21,912 and \$109,560. Regarding income levels, community spouses can keep roughly \$2,850 per month. For single individuals, there is a \$73 monthly income exemption and in 2020 and a \$2,000 liquid asset exemption. The exemption in 2010 for a single individual was closer to \$50 per month.

If a policyholder was single at the time that they purchased a policy, we assume they remain single at the time that they are projected to begin using LTSS. For those who are married when they make the initial policy purchase, we use census data to estimate their probability of remaining married when they begin using services. These probabilities are then applied to the population of initially married individuals so that in aggregate, the proportion of people who remain married at various ages reflects U.S. population estimates. It is important to project this since there are very large differences between the level of excluded assets for couples versus single individuals if one member of the couple requires institutional LTSS. These eligibility criteria were then applied to the cohort of individuals who were projected to be LTSS service users.

### **Medicaid Spend Down Results**

Once an individual is identified as being an LTSS user and randomly distributed to a duration of need category, we then evaluate the relationship between the daily cost of care, the available daily income that the individual can contribute, the level of assets to support any gap between care costs and available income, and whether the total level of assets is sufficient to cover the gap throughout the entire duration of need. Assets are adjusted to account for marital status and the community spouse resource allowance. If the level of income and assets is lower than what is needed to cover the entire duration of need, the individual is deemed to have “spent down” to Medicaid. Individuals who tend to spend down are those who require care for long durations. Individuals who are assessed as needing care for more than five years, are projected to use care for eight years – 96 months.



## Actual Claims/Expected Claims (A/E)

We used [data and metrics](#) from the most recent NAIC report on performance of insurance companies to track how companies are performing on their actual claims/expected claims (A/E) ratio.

In order to evaluate whether certain states are at higher risk for experiencing additional rate increases from companies, or increased Medicaid risk if rate actions are not granted and company financial vulnerabilities increase, we tracked the A/E claims experience of the top ten companies offering policies in each state.<sup>4</sup> Across these states, the top ten companies accounted for between 70% and 85% of all policies in the states. For each company, we then weighted their A/E ratio by state market share, summed the result across companies, and then generated a state-based weighted A/E claims ratio.

## Study Limitations

The modeling used in this analysis incorporates some uncertainty around specific assumptions that can affect the results. For example, to conduct the spend-down analysis, a stylized single Medicaid program was used which does not account for all differences across states. Moreover, based on census data, the model also simulates changes in marital status over time since eligibility for Medicaid is greatly influenced by marital status.

Another limitation is that some buyer databases have a small study size. There's a higher level of variation around certain point estimates relating to sociodemographic characteristics, income, and assets associated with small cell size. Finally, when looking at how companies are performing in terms of "actual-to-expected" claims experience, the full history of their rate increase activity is unavailable. As well, there are timing issues regarding when new rates go into effect and it is unknown whether new rates that may be enforced at this time reflect the experience as presented.

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<sup>4</sup> We use the top ten companies because this is the way that the data is presented in the NAIC LTC Experience Exhibit Reports.



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